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NATIONAL POLICY AND ISSUES

TECHNICAL TRANSFORMATION; ECONOMIC READJUSTMENT

Beijing RENMIN RIBAO in Chinese 18 Jan 82 p 5

[Article by Zhou Shulian [6650 0647 5571]: "Technical Transformation and Economic Readjustment"]

[Text] For a long period of time various negative consequences have resulted from our neglect of the technical transformation of existing enterprises. The first [negative consequence] is aging equipment. At present the equipment of many enterprises is obsolete. The service life of machine tools of the First Ministry of Machine Building is, for the most part, over 20 years. Much of the equipment in light and textile industries is even more outdated and backward. Due to aging equipment, the metallurgical, chemical industrial, building material and other branches of industries consume 20 and 30 million tons of standard coal in over a year. In some enterprises the loss of equipment due to corrosion is severe, so much so that it is even difficult for them to maintain simple reproduction. The second is backward technology. This is the cause of the poor quality of products, massive depletions, and high costs. The third is outdated products. Economically developed nations for the most part attach great importance to the replacement and exchange of products. But for several years our products more often than not have been consistently limited. Consequently, the economic results have been much poorer than those for similar products overseas. The fourth is disrepair of factory buildings. Sections of old cities correspond to parts of factories in disrepair that imperiled both production and safety. The fifth is the lack of qualified technical personnel. Not only is the number of technical personnel of our nation's industrial enterprises small, but they have not been fully trained and utilized. In 10 years of upheaval some knowledge that technical personnel originally had a good command of has also fallen into disuse. As a result, the phenomenon of outdated knowledge is rather severe. The above circumstances make clear that the technical transformation of existing enterprises, to be carried out step by step and in a planned way, is indeed completely essential.

Technical Transformation of Enterprises Is an Important Task in the Readjustment Period

The technical transformation of enterprises encompasses many aspects. In view of the serious problem of aging equipment of a fairly good number of enterprises, there is at present a great need to give importance to replacing equipment. The replacement of equipment generally requires that advanced equipment take the place of backward equipment, with emphasis on the replacement of key components and equipment. In addition, technical transformation encompasses improving technology, developing new products, maintaining the transformation of factory building structures, as well as training qualified scientists and technicians, and increasing technical competence of workers. Technical transformation is a long-term task. In the midst of the economic readjustment period, our nation is confronted by financial and economic difficulties. Therefore, while carrying out technical transformation of enterprises we must go no further with full-scale reconstruction. We cannot demand overall transformation within a short period of time. We must carry it out step by step and in a planned way on the basis of need and possibility. Obviously, this certainly does not imply that during the readjustment period, we may neglect the technical transformation of enterprises. On the contrary, technical transformation is extremely important in economic readjustment.

First, it can lay a rather firm material and technological base for the development of light industry. Accelerating the development of light industry is an important task for the readjustment period. To enable the light industrial sector to develop continually and rapidly, an essential material and technological base needs to be established. How, then, can this be accomplished? Evidently, we can no longer rely on new construction, spending huge investments to build a large number of new factories. Doing this under the present financial and economic circumstances would not only be impermissible, it would also be disadvantageous to increasing economic benefits. The correct and feasible way is to rely mainly on existing enterprises to carry out technical transformation emphatically and step by step. In recent years the bicycle trade and other trades have done it this way and have achieved good results. In the light industrial sector, there is also a structural rationalization problem, such as in the cotton textile trade where thorough processing capacity is insufficient and post-printing and dyeing rearrangement is backward. These weak links should also mainly rely on the technical transformation of existing enterprises to fill up the gaps.

Next, it is capable of promoting the readjustment of heavy industry and will impel structural rationalization within heavy industry. In the past, heavy industry was mainly self-serving and was particularly serving new construction. Now, the scope of capital construction has been reduced, causing some heavy industrial departments to have insufficient production responsibility. To solve this problem, in addition to producing and providing raw materials for consumer goods for daily use and increasing the production of exported goods, the heavy industrial sector also needs to firmly get hold of the replacement of equipment and technical transformation. Some people estimate that in the coming few years both mechanical and electrical products and metal products for daily use and export products, etc., will add up to less than 40 percent of the gross value of industrial output of our engineering industry. What is needed to serve the national economy and technical transformation (including maintenance) accounts for around 60 percent. If the technical transformation of existing enterprises is not firmly grasped, the problem of the engineering industry and other departments "not eating their fill" will then be difficult to solve. If the replacement and transformation of equipment is firmly grasped, then it will be capable of promoting the engineering industry, the metallurgical industry, and other relevant heavy industrial departments. The technical transformation of enterprises can still impel heavy industry to change its internal structure, by putting less emphasis on serving capital construction and giving more attention to serving the technical transformation of old enterprises. Past excessive self-indulgence has been changed to more and better service to agriculture, light industry, energy resources, communications, as well as commerce, service trades, and other branches. In this way, the internal structure of the heavy industrial sector can then gradually suit the needs of the healthy development of the entire national economy.

Furthermore, it would be advantageous to conserving energy resources. The short supply of energy resources is the principal factor behind the current limit on the development of the national economy. The means for solving the energy resource problem is putting equal stress on increased production and practicing economy. But at present conserving resources should be given more prominence. The conservation of energy resources must rely on readjusting the structure of products and improving the management of resources. Furthermore, we must rely on technical transformation. Our country's potential for undergoing technical transformation and resource conservation is great. For example, the capacity of industrial and heating boilers throughout the country is for the most part small; heat efficiency, low; and energy consumption, high. If the boilers are altered so that capacity is enlarged and the heat efficiency increased, and central heat supply methods are adopted, the theoretical calculation of the resource conservation potential per annum could be millions of tons of standard coal. If carried out gradually, great quantities of resources could be conserved within the near future. Another example is that our country's motor vehicle energy consumption is much higher than that overseas. If replacement and alteration of existing motor vehicles were carried out, the resources that would be conserved would also be considerable.

Moreover, economic results can be improved. Technical transformation will increase both investment and economic results of existing enterprises in many aspects. The exploiting of potential as well as innovations and the transformation of old enterprises will generally save more investments than building new projects. Results will also be good and desired results will be rapidly produced. For example, of the amount of investment of the unit production capability of the Gansu East Is Red Glass Factory, new construction was 24 yuan/carton and exploitation of potential, innovation and transformation was 5 yuan/carton. Of the amount of investment of the unit production capability of the East Is Red Aluminum Factory, new construction was 6,522 yuan/ton and exploitation of potential, innovation and transformation was 2,435 yuan/ton. The past exploitation of potential, innovation and transformation often consisted of old factories getting additional equipment so it could be called "inter-factory extension." Doing so also achieved rather good results. By doing a good job in technical transformation in the future, and by realizing the intent of reproduction on a much larger scale, economic results can thus be even better.

Carrying out the technical transformation of existing enterprises is not only an important task for the readjustment period, but also the only way to develop our nation's economy. Before liberation our country's economy was extraordinarily backward, industry was quite underdeveloped, and the foundation was very weak. After establishing the People's Republic it was necessary to set up a group of new enterprises in order to lay the foundation for industrialization. Within a certain period of time we placed emphasis on establishing new enterprises, which was entirely essential. Once there was a group of essential factory enterprises laying the preliminary foundation for industrialization, we did not shift the focus on time to the technical transformation of existing enterprises, thus resulting in a loss to economic construction. Looking at some economically developed countries, the proportion of fixed capital investments used in transforming already existing enterprises is quite large. For example, in America between 1947-1948 the proportion of the fixed capital investment used in transforming already existing enterprises was 69 percent, 55 percent from 1947 to 1950, and 77 percent from 1971 to 1978, assuming the form of an increasing tendency. This kind of tendency was in conformity with laws. At present our nation already has 400,000 industrial and communications enterprises, with fixed assets amounting to more than 400 billion yuan. For vast reproduction in the future, in addition to establishing some essential new enterprises in accordance with possible conditions, we must mainly rely on the technical transformation and give full play to the role of existing enterprises.

Technical Transformation Must Have as Its Goal the Increase of Economic Results

It must be pointed out that although technical transformation can increase economic results, this certainly does not say that any technical transformation will inevitably cause an increase of economic results. In fact, in the technical transformation of the past there arose the situation of chasing after form, not to mention actual effects, and with the result that much money was spent for small results, some to the point of severe loss. For example, some provinces spent much money in making more than 100 automatic routes. But because they had no definite purpose and were not realistic, the result was little use. Drawing lessons from the past, we must now certainly insure that technical transformation earnestly achieves the benefit of increasing economic results from guiding ideology and policy measures. In carrying out the technical transformation of any enterprise, economic results must be earnestly considered. Not only must the economic results of each enterprise, trade, department, and district be considered, but also those for all of society must be taken into consideration. As for major projects, we certainly must conduct feasibility studies, put forth various programs, and select the best plans in accordance with the demands of increasing the results of socialist economy. Technical transformation must undoubtedly substitute advanced technology for backward technology, but this can only be achieved gradually. Considering the situation of our massive labor force, insufficient funds, and backward technology, we especially cannot blindly pursue advanced technology and we cannot unilaterally pursue automation. Even if our country were economically developed, we also certainly could not blindly chase after advanced technology. For example, electronic computer control is advanced technology. However, in America too, they do not install electronic computers in all places where electronic computers can be utilized. The new technology that they adopt is also conditional and is dependent on whether or not it is economically worthwhile. Technical transformation is a major event that touches upon the whole national economy, and there must be comprehensive programs, plans and coordinated actions before good economic results can be achieved. Thus, on a foundation of testing and research, it is necessary to formulate plans that are feasible and based on science. The goals, foci, steps and principal measures for technical transformation must be correctly defined. The plans should be formulated from numerous administrative levels and should include the overall plan of the whole country and plans of major cities, departments and trades. Enterprises should also have their own plan for technical transformation. Selecting the focus of technical transformation is an important issue. The starting point for selection should be advantageous to solving the most pressing problems in the national economy at present, advantageous to spurring on the technical transformation of the whole national economy, should rapidly produce the desired results and should have the possibility of being accomplished. The plans should also encompass funding sources, sources of equipment and materials, arrangements for scientific research, design and testing, as well as any relationship for handling production responsibility and technical transformation.

In capitalist countries the technical transformation of enterprises is the affair of individual enterprises, but the state intervenes and guides to varying degrees. Ours is a socialist country, and in practicing planned economy the state must further strengthen leadership over this kind of major event which influences the whole nation and bring it into the unified national economy plan. However, under the present conditions where prices are inequitable and market mechanisms are unable to function normally, if the state's planning guidance is relaxed, not only will the technical transformation of enterprise not be able to be smoothly carried out, it can even produce various deviations. The leadership of the state is multifaceted and includes formulating plans, strengthening economic legislation and jurisdiction, utilizing various kinds of economic levers, and carrying out needed administrative intervention. Naturally, emphasizing the state's strengthening of leadership certainly does not imply that it may ignore the role of enterprises. It would be difficult to carry out smoothly technical transformation without the zeal and initiative of enterprises. Thus, state leadership must be strengthened and the initiative of enterprises must be brought into play. The state must, by perfecting the economic responsibility system and taking measures in the areas of funding, installations, goods and materials, as well as prices, tax revenues, credit, interest rates, and other fields, guide, encourage and supervise enterprises, to carry out the replacement of equipment, improvement of technology, exchange of products and other series of technical transformation activities based on the principles of state planning and rational economy. The state must strengthen ideological and political work that will make the workers improve their understanding of technical transformation so that they can learn the attitude of masters in doing this work well with all their energy.

At present we must particularly emphasize handling well the relationship between technical transformation and economic readjustment. The technical transformation of enterprises is one of the tasks of economic readjustment, and must be subordinate to and advantageous to all of the economic readjustment work. In order to cause technical transformation to promote economic readjustment, technical transformation must at first be combined with the readjustment of enterprises. Those enterprises that are about to shut down and enterprises whose direction in production is uncertain should temporarily not carry out further new transformation so as to avoid giving rise to squandering and increasing difficulty for later readjustment. Next, technical transformation must be combined with the reorganization of industry. On a foundation of united reorganization and based on the principles of specialized cooperation and rational economy, further new transformations must be carried out which will cause the mutual advancement of technical transformation and united reorganization. Further, technical transformation must be combined with the reorganization of enterprises. Those enterprises whose management is utterly confused and whose daily production is poorly done must undergo reorganization before they can create the conditions for the development of technical transformation. In addition, technical transformation must be combined with the full utilization of existing technical facilities. It should be seen that at present technical facilities of our nation's many enterprises are far from being fully utilized, and among them is some equipment that is considerably advanced. Thus, while attaching importance to technical transformation, we must attach great importance to bringing into play the potential of existing enterprises. We must guard against taking advantage of the opportunity of technical transformation and acquiring a collection of new technology and new equipment that is incapable of being fully utilized. This way, we can then cause technical transformation to truly be beneficial to increasing economic results, and we can promote the accomplishment of the task of economic readjustment as early as possible.

9926
CSO: 4006/322

STERN HANDLING OF ECONOMIC CRIMES URGED

Beijing ZHONGGUO CAIMAO BAO in Chinese 2 Mar 82 p 1

[Article by Staff Commentator: "Major Economic Crimes Must Be Dealt With Sternly"]

[Text] The case of reselling automobiles for profit in Anyang, Henan Province, involved more than 130 units in 15 provinces and municipalities. There have seldom been as extensive activities and as staggering profits since the founding of our people's republic. The Henan Provincial Party Committee treated this major case extremely seriously. Under the direct guidance and support of the Central Commission for Inspection of Discipline, a special investigative group was established to deal with the case thoroughly and sternly and to give the criminal activities a serious blow. How well this case was handled!

The Anyang case shows that the spread of unhealthy trends and criminal activities in the economic sphere in some regions and departments is extremely serious. We must exert great efforts to check these unhealthy trends in the economic field and deal the unlawful criminal activities a serious blow. This is an important struggle affecting the rise and fall of our Party and state.

The Anyang case has shown us clearly that the reason the criminal elements were able to do what they wanted was that they had behind-the-scenes backers in our institutions, enterprises, and agencies. More seriously, attracted by money and goods, some cadres with leadership responsibilities directly participated in the unlawful and criminal activities. They acted in collusion and in cahoots with the criminals, which made it possible for the wanton criminal activities to prevail and caused great losses to state property and to the people. These cadres ignored Party discipline and the law of the land, and recklessly used the responsibilities and authority given to them by the Party and the people for personal gains. Some of them associated with the criminal elements. Others took the opportunity to make a gain, willing to do anything to achieve it. The profiteering elements in our society are able to attract into their "relations network" the weak-willed who are hit by "sugarcoated bullets," adopting the tactics of "using money as the horse to travel the difficult road of the world, and using wine as the army to break out of the siege of the city of sadness." This type of "relations network" shelters evil people and countenances evil practices and becomes the hotbed of crimes. It must be thoroughly cleaned up.

This struggle to deal a serious blow to the criminal activities in the economic sphere accords with the will of the Party and the people and is being intensively pursued. What is worth paying attention to is that there are still some leading cadres who are not combating and struggling against these unhealthy trends. They still practice favoritism and shield the wrong-doers, making light of serious matters and ignoring the less serious. Some are even permissive and openly block any punishment. This helps the unhealthy trends to spread and become disasters and delays the deserved punishment of the criminal elements.

The determination of the Party Central Committee to investigate and deal with unlawful and criminal cases in the economic field and to punish the unlawful elements, especially the unlawful activities of certain leading cadres, is extremely necessary. We must eliminate every obstruction and investigate to the end. All those who have violated the criminal law must be punished accordingly. This is required by the state laws of the land. It is demanded by the broad masses of the people.

5974
CSO: 4006/359

AGRICULTURAL LOANS IN KANSU REACH 100 MILLION YUAN

Lanzhou GANSU RIBAO in Chinese 15 Feb 82 p 1

[Article by Gong Tongan [7895 6894 1344]: "Develop Economic Diversification--Increase Peasant Income; Loans in 1981 Totaled 100 Million Yuan"]

[Text] A Lanzhou dispatch. While supporting grain production, the various levels of agricultural banks and credit cooperatives also increased loans for economic diversification. These loans for the entire province reached a total of 100 million yuan last year, an increase of 42.8 percent over the previous year.

In supporting the development of economic diversification, the financial departments in the various rural areas selectively supported the development of economic crops and traditional products, such as lilies, hotbed chives, day lilies, dried fungus, beets, sunflower, black mellon seeds, citrus, tung oil tree, raw lacquer, as well as such valuable Chinese medicinal herbs as gastrodia elata and coptis root. The Lanzhou subbranch bank and credit cooperative made loans last year totaling 2,870,000 yuan, making it possible for the production of roses, lilies, and tobacco to reach an all-time high.

Banks and credit cooperatives at various locations fully utilized the rich labor resources and natural resources in the rural areas and actively supported the development of industrial and subsidiary production. The loans to commune and brigade enterprises in the province totaled more than 47 million yuan, supporting over 6,000 commune and brigade enterprises in the development of marketable daily-use consumer goods and medium and small farming implements.

At the same time, financial departments in the various rural areas also put into practice the system of "two contracts based on households" for most of the production brigades in the province, supporting thousands of families and households in the development of economic diversification. Loans to individual commune members accounted for over 60 percent of total loans for economic diversification. These loans supported more than 13,000 various types of integrated households, specialized households, and key households in the development of industrial and subsidiary production and increasing the output of commercial products.

5974
CSO: 4006/359

INDUSTRY

INDUSTRIAL OUTPUT INCREASES IN FIRST QUARTER

OW100559 Beijing Domestic Service in Mandarin 1200 GMT 7 Apr 82

[Text] China's industrial and transport work was fine during the first quarter of this year with some improvement in the economic results of the work. The gross industrial output value was 129.32 billion yuan, accounting for 24.2 percent of the annual plan and showing an 11.6-percent increase over the same period last year. The output of 81 of the 99 main industrial products, including cotton yarn, paper, sewing machines, coal, crude oil, acids, alkalis, lumber and cement, as well as electric power output, met the quantitative quotas for the quarter as set in the annual plan. Output of 79 products exceeded the figures for the same period last year. In addition, the quality of most products turned out by coal, petroleum, chemical, building materials and light industries was maintained at a fairly good level.

For the first quarter of this year, the state-run industrial enterprises listed in the budget turned more profit to the state than during the same period last year, while fewer enterprises operated at a deficit. As of the end of February, the number of enterprises operating at a deficit had decreased by some 1,300, and the total loss had declined by 10.4 percent compared with the records for the same period last year.

Generally speaking, the industrial and transport work for the first quarter had a good beginning. Energy production was better than in the past. Light industrial production continued to grow, and heavy industrial production began to rise steadily. At the same time, fairly good results were achieved in fulfilling the cargo transport quota. However, it should be noted that some products whose supply had already exceeded demand continued to accumulate in stock, and insufficient work was done to control the production of certain items as planned. Energy supplies and transport service were still inadequate to meet the demands. The plan for supply of lumber from the south to the north was not fulfilled. Moreover, the quality of some products declined instead of improved. For this reason, the State Economic Commission thinks it still is an arduous task to fully accomplish the production plan for this year and that in no way should we relax our efforts.

The second quarter is a golden season for developing industrial production and transport service. The State Economic Commission urges all localities and departments to take the opportunity to further promote production during the second quarter by turning out more products required by the market while paying attention to achieving greater economic results in their work, improving the quality and increasing the varieties of their products, practicing economy and ensuring the safety in production.

CSO: 4020/118

RELATIONSHIP OF SCIENCE AND ECONOMICS

Tianjin KEXUEXUE YU KEXUE JISHU GUANLI [SCIENOLOGY AND MANAGEMENT OF SCIENCE AND TECHNOLOGY in Chinese No 1, 1982, p34-36

[Article by Zheng Muqi [6774 1970 3823]: "Science Economics"]

[Text] In modern society there already is a very close relationship between science and technology and economic development. The development of the national economy depends upon science and technology and science and technology serve national economic development. The natural sciences, technology and the science of economics are always intermingling and overlapping, forming a new branch of science--science economics. This is both a branch of economics and an important organizational component of science. Its major areas of investigation are: the relationship between science and economics; the formation, development and economic characteristics of science "production"; the study of the economic standards of science workers and of the work performed by science research institutes; as well as the economic consequences of scientific research work.

I. The Relationship Between Science and Economics

In his "1857-1858 Economics Draft" Marx pointed out, "Nature did not fabricate any machinery, did not fabricate such things as automobiles, railways, telegraphs and looms. These are the products of man's labors, they are natural materials transformed by man's will to exercise mastery over nature or by the activities of human organs in nature. They are the material transformation of the power of the intellect. The development of fixed capital demonstrates that general social knowledge already to a large extent has transformed direct production forces, and as a consequence has caused the process of social life conditions to be greatly influenced by the control of general knowledge and to moreover use this knowledge to bring about reforms." (MAKESI-ENGESI QUANJI--THE COMPLETE WORKS OF MARX AND ENGELS Vol 46, Part 2, p 210-220) With this statement Marx reveals the major role of scientific knowledge in material life and in social life.

1. Science and Technology Promote Development of the National Economy

The history of the development of modern science and technology dramatically demonstrate that the development and application of science and technology provide advanced technology for development of the national economy and are the key link in improving labor productivity. The development of a nation's social production forces and the increase of its social wealth are to a great extent determined by the role of science and technology, the success in accomplishing material transformation of knowledge and by the "quantity of science and technology" involved in production. According to the statistics of certain economists, the 60 percent rate of economic growth in post-war West Germany is directly or indirectly related to new accomplishments in science and technology. In the Soviet Union, part of the 70 percent increase of the national income is related to applications of the results of science and technology. In the period of the Ninth Five Year Plan (1971-1975), the benefits obtained from the results of science and technology produced economic results valued at over 40 billion rubles. The [huanqiu-world] Petroleum Products Corporation in America has 10,000 employees, 15 percent of which are scientists and technicians. This corporation registers 1,000 patents each year and about one half of corporate profits are related to patents or to construction contract fees.

2. Science and Technology Guarantee the Scientific Nature of Economic Work

With regard to all sorts of economic conditions as well as the mutual relationships between various factors affecting economic development, the use of scientific theory, technology and methods in carrying out investigations and research will guarantee that there is a high degree of scientific accuracy in the goals, direction, principles, policies, actions, programs and management of national economic development.

3. Scientific Research Work Must Also Follow Economic Laws

Science and technology are a part of the national economy and their development must also adhere to the overall national development. Therefore, the development of scientific and technological enterprises not only must adhere to the laws of scientific development but must also adhere to economic laws. Just as the socialist national economy is planned according to the laws of proportional development and according to the state's financial powers and society's needs, the economic development of science and technology also must have a logical proportion. At the same time, each stage of its development, such as basic research, applied research and developmental research also should have a logical proportion.

The ultimate goal of scientific and technological development is to develop the national economy and improve the people's standard of living. Therefore, the development of scientific and technological enterprises must have an economic viewpoint and must pay attention to economic results. Economic methods must be used in managing scientific research work, such as developing and managing scientific research work according to the law of value and the law of the division of labor.

Thoroughgoing investigation of the relationship between science and technology and economics has major significance for the promotion of economic development, guaranteeing the scientific nature of economic work and improving the economic results of scientific research work.

II. The Formation, Development and Economic Features of Science "Production"

1. The Formation and Development of Science "Production"

The goals of scientific research are: 1. The creation of spiritual wealth--new knowledge and new concepts and improvement of the people's intellectual capabilities. 2. The creation of material wealth--to transform science into a social production force. It is only with the integration of science and technology to transform science into a practical social production force and create material wealth for society that we achieve science "production."

The economic statistics of western economists divide production activities into three industries. The first industry is mainly agriculture and includes forestry, animal husbandry and fishery. This was the first industry throughout human history which could maintain mankind's basic livelihood. In slave societies and feudal societies people also utilized some technology of this first industry, such as planting, herding and breeding. Although the techniques of that time did have some scientific content they were at a very primitive stage and cannot be called science "production." Following the Industrial Revolution the manufacturing industry then appeared as the second industry, including such industries as mining and construction. At this time science and technology had already been transformed into a production force, creating a strong material foundation for mankind and occupying a defininte place in society. Following the growth of social production and consumption, the service industry arose and developed as the third main industry, and included such public services as transportation, communication, electric power, gas and running water; service industries in the nature of commerce, banking and insurance; cultural and educational services such as science, education, broadcasting, journalism and television; and service industries of a consumer nature such as entertainment, dining and tourism. At this time, science and technology had already become an independent production department, occupying an important position in society. In the last several tens of years, the service industries of the economically advanced nations have developed rapidly and have had increasingly heavy investment. According to statistics, in 1975 Japan had 12.7 percent, 35.3 percent and 52 percent of its employed population in the first, second and third industries, respectively. In 1975, the United States had 68.4 percent of its employed people in the third industry, occupying 63 percent of the gross national product. Science and education, the two services industry departments which produce knowledge, are becoming increasingly more important and are praised as the "sophisticated industries" which promote social and economic progress.

2. The Features of Science "Production"

(1) From the economic point of view, science "production" is the broad reproduction of knowledge in society. Science "production" differs from usual production in that it encompasses the two areas of the material and the spiritual. The production of scientific knowledge always benefits from previous results, and in the process of deriving these benefits scientific knowledge continually is supplemented and perfected. It cannot be worn out through use and the more it is used the faster its "capital" increases.

(2) The economic results of science "production" are not calculated in the same fashion as general production. Because the spiritual wealth created by scientific research activities do not belong to the realm of production, and because the material wealth that it creates does fall into the realm of production, consequently it is difficult to devise a unified formula to calculate the economic results. The pure theory of basic research which creates new concepts and new knowledge is wealth shared by all mankind. When scientific results are expressed in theorems, laws and formulas, such as Newton's three laws, the economic results are difficult to measure and express in concrete numbers. As for directional basic research, its results laid the foundation for new inventions. It is also difficult to directly measure such results. At the [Beier] Research Institute in the United States Shockley and Bardeen in their theoretical investigations into the responses of the substance germanium discovered its nature as a semi-conductor and as a consequence invented the transistor. This is an example of directional basic research which has economic results. Generally speaking, the economic results of science "production" must go through the three stages of basic research, applied research,and developmental research before they become obvious and can be evaluated according to information on their special features of quantity and quality.

(3) The costs of science "production" are difficult to determine. The exploratory nature of the products of scientific research makes it difficult to quantify production and the cost of each aspect is difficult to determine. In the process of material production raw materials and the basic means of production undergo depreciation (the material transformation of labor), which are entirely accounted in the newly created value. In science "production" the results of previous of labor are used entirely without cost and there is no newly created value to with which to calculate the transformation of labor, Therefore, its cost is very low. Nonetheless, science "production" can be a complete failure and still have great learning value

(4) In the area of circulation, science "production" is not exchanged at equal value. When the ownership of science "production" is transferred the information is not lost. Therefore, the transmission of such production differs from the circulation of ordinary commodities and is not a resale at equal value.

These special features of science "production" determine the special features of the relationship of science and economics, determine the choices in science economics, determine the organization and management of scientific research work, determine the formulation of scientific research planning and determine the formula for evaluating the worth of the component structure and ownership transfer of the results of scientific research.

3. The Commodity Characteristics of Scientific Research Results

The commodities in a capitalist society are divided in two types--material commodities and intellectual commodities. These two types of commodities are expressed in very different forms. The former is concrete while the latter is abstract. Intellectual commodities can be plotted on paper, discussed in a report, punched on tape or recorded in various concrete ways. If for example a new commodity is but a shell the existence of which depends on the results of scientific research, then the purchase price of that new commodity is relatively inexpensive. What is ten times or one hundred times as expensive is the technology which planned and manufactured that new product. Although there are different forms to concrete commodities and intellectual commodities they nonetheless have concrete value and applied value, and similar commodity values (W) constitute the formula:

W equals C plus V plus m

In the formula, C is constant capital, V is variable capital and m is surplus value. However, although the results of basic theoretical research have applied value, these hypotheses, laws and formulas are impossible to calculate with concrete figures, even though the application figures in the value produced by creation or invention. Such scientific research results do not have any commodity characteristics.

Under the socialist system, there still exists a commodity exchange relationship between society, the collective and the individual, and this undergoes a process of currency exchange based on equal value. However, under the socialist system, commodities have planned production by socialist enterprises in order to satisify social needs. Whether it is individual consumer goods or the means of production, both go through the realm of commodity exchange to enter the realm of consumption. Therefore, they are commodities which exist as direct products of social labor. Under the socialist system, those scientific research results which have quantifiable value and applied value also have commodity characteristics.

In the past in China, the scope of commodities was limited to the means of livelihood and to that portion of the means of production which was exchanged between the enterprises which were under the ownership of the whole people or the collectives. The largest portion of the means of production was not for sale, but rather circulated among the various enterprises owned by the whole people through a system of state allocation and transfer. Therefore, this portion of products did not possess commodity characteristics, but rather were commodities shells, and were treated as commodities only in economic accounting and product valuation. In the past, the results of scientific research by China's scientific research institutes were given to the enterprises to use. There was no compensation for ownership transfer and there were no commodity characteristics. However, the results of not recognizing the commodity characteristics of applied research and developmental research are serious in that scientific research work costs are not calculated, the efficiency is disregarded, quantities are small, the standards are low and the research periods are prolonged. Now that reform of the national economy management system are being instituted, commodity characteristics should gradually be implemented for a portion of the scientific research results.

11582
CSO: 4013/22

SYMPOSIUM ON PRICING

Beijing ZHONGGUO CAIMAO BAO in Chinese 16 Mar 82 p 3

[Article by Wang Ziqiang [3769 1311 1730]: "China Pricing Commission Convenes Symposium on Theories of Pricing"]

[Text] The first symposium on the theories of pricing to be held since the founding of the nation was convened by the China Pricing Commission from February 2nd through 11th at Kunming. The topics discussed were price stability, agricultural commodities prices, price supports, the theories of pricing and price formation.

The Implications of Price Stability. Some comrades believe that this primarily concerns the basic stability of retail prices and includes three levels of meaning: 1. Stabilization of the general level of retail prices. 2. Stabilization of the basic prices for livelihood consumer goods. 3. Stabilization of the people's standard of living. Some comrades believe that price stabilization is divided into absolute stability and relative stability. Absolute stability is the provisional freezing of prices. Relative price stability is explained in three ways: 1. Individual commodity prices may rise or fall but the average annual prices for goods is stable or nearly so. This can be considered either as absolute or relative stability. 2. If commodity prices and wages have relative changes and if wages increase at a rate slightly faster than that of prices this is considered to be relative stability. 3. If the overall price level rises at a rate slightly lower than the interest rate for savings this also is considered to be relative stability. There are yet other comrades who explain things from the viewpoint of mathematical economics and who believe that the meaning of price stability is that in a given economic system the tendency and rate of commodity price changes should match the tendency and rate of commodity value changes.

The Mathematical Limits of Price Stabilization. There were four observations made at the symposium: 1. If the retail price index has an annual increase of 1,2 or 3 percent then there is basic stability. 2. According to China's history in pricing the annual rate of increase cannot exceed 2 percent. 3. The limitation can not cause a decline in the people's livelihood. 4. The percentile system should not be used as a standard. This should be replaced by a system which includes increases in value along with some other index in the national economy, such as a proportional relationship with the speed of wage increases.

The Issue of Agricultural Commodity Prices. There was relative unanimity of views expressen in saying that in this series of adjustments great improvements had been made in lowering the purchase prices for agricultural products. There now is a mutual correspondence between agricultural product prices and developments in the national economy. This basically will promote development of agricultural production and increase the peasants' income. Consequently, in the immediate future there should be stability and no need to make any more major adjustments. Some comrades believe that the stability of agricultural product prices means that there is stability in price levels, and in order to maintain ideal relative prices there ought to be minor price increases or decreases in a small number of goods.

The Issue of Excess Purchases of and Price Increases for Agricultural Commodities. There are two basic viewpoints: 1. The base figure of state purchases lack any direct relationship with advantages or disadvantages in local conditions or with the amount invested, and the price increases do not correspond to the differential profits. Such methods do not suit the requirements for development of commodity production. There are many disadvantages and few advantages and it is not a good device for making long-term price adjustments. 2. There is a theoretical foundation for overpurchase and price increases. In any given period in which there are no significant reforms of the technology, some units can locally continue investment to increase production, which will result in progressive cost increases and in progressive profit decreases. Overpurchases and price rises are a form of supplement. The present problems are primarily caused by shortcomings in our work and certain rectifications ought to be made, such as strengthening leadership of the plan, adjusting the rate of price increases and regulating the maximum limits.

The Issue of Price Supports. Three views were expressed: 1. Price supports originated in the basic economic rules of socialism. If there are planned prices then there ought to be price supports. They can only be controlled and cannot be eliminated. 2. Price supports are a manifestation of the conscious use of the law of value and are a necessary compensation when prices do not equal value in a transaction. Price supports have two characteristics. On the one hand they promote production development and price stability and are beneficial in providing a secure living. At the same time they add to the problems of the price structure and increase the burden on national finances. Because of this, price supports can only be of a certain type for a fixed period. 3. Price supports violate the law of value, so they cannot become a necessary or long-term fixture of socialist economics. In the future we should take steps to make integral wage and price adjustments.

The Theory of Pricing. Everyone believes that this is an item of basic construction in commodity price work. Many comrades engaged in a discussion of the theories of pricing and the price formation problems, which measurement of the theories of pricing can be expected to solve.

The Issue of Price Formation. The core of the discussion was how to follow the principle of taking the economic plan as primary and supplementing it with market adjustments in selecting a corresponding price formation. The comrades attending the symposium all agreed that the five types of price formation, i.e., state fixed prices, floating prices, industry and commerce mutually fixed prices, negotiated purchases and negotiated sales, and market trading prices, all played a part in galvanizing the economy. At the same time, they suggested that in the future we must use the primary tool of planned prices and adjusting and negotiating prices to strengthen our management of market trading prices.

11582
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EXPORT VOLUME, VALUE OF ZHEJIANG SILK GOODS SEEING GREAT SUCCESS

Hangzhou ZHEJIANG RIBAO in Chinese 9 Feb 82 p 1

[Article by Staff Reporter Chen Xingde [7115 1630 1795]: "Zhejiang Established Its Own Port and Began to Conduct Its Own Export Business in 1981; Export of Silk Products Completed Its First Year Successfully; Trading Relationship Was Established With 455 Customers in 41 Countries and Regions and Total Value Exceeded US$100 Million"]

[Text] According to the Hong Kong Huarun Textiles Company, Ltd., agent for China's textiles for export in Hong Kong, Zhejiang silk goods placed first among the nation's 11 port companies in both export volume and export value in 1981. Also, according to the responsible official of the provincial silk company, the total value of the province's silk exports last year was US$105,780,000, exceeding the planned value of US$100 million by more than US$5 million. In its first year of establishing a port and managing its own exports, the "Silk Capital" enjoyed instant success. Praises were received from others in the trade around the country. Their comments were: Not very easily done.

Not only was the volume of our silk export the largest but its quality was also consistently very good. Foreign customers are now asking for "Zhejiang Silk" by name. This shows that the quality of the "trump card" products of the Baichang Plant silk has shown a general improvement. The top of the line of the province's silk export still is in the position of selling so well that "there is demand for everything there is." These include such products as Chinese crepe, oriental yarn, genuine thin silk, baldachine, fabric made of waste silk, and weft-knitted taffeta. Newly designed and trial-produced silk products for export, such as brocade made of raw silk, grass linen made of unprocessed silk, tartan made of raw silk, keluoni [0344 5012 0716] made from spun silk, and variegated crepe, and products for domestic sales such as fragrant silk, pure woollen, figured silk, and chiffon have also been welcomed by customers at the Canton Trade Fair and in the domestic market. The degree of processing of the silk products was also improved last year, developing gradually in the direction of small quantities, more color designs, and more final products. The export of real silk prints in small quantities totaled 250,000 meters. At the same time, following in the footsteps of 10 some export garment plants, the Huzhou, Zhedong, and Huali silk garment plants also began to produce export garments. Last year the province exported 790,000 pieces of silk garments, 400,000 embroidered dresses, and US$630,000 worth of embroidered replica articles, for a total value of US$9,466,700.

Zhejiang began to establish its own port and started to conduct its own export of silk products at the beginning of last year. At that time, it had just begun to handle deliveries, time was short, there were few customers, it was not familiar with the business, and there were many other difficulties. With the strong support of the provincial government and sister departments, the provincial silk company fully developed the advantageous "industry and foreign trade integration" system. On one hand, it stressed production adjustment, planned management, maintenance of quality and quantity, and on-time delivery. On the other hand, it stressed the training of personnel in the foreign trade business. At the same time, extensive investigation and study on the international silk market were carried out, so that requirements reflected in "foreign trade" were taken care of in "industry" on a relatively timely basis. For instance, in order to meet the requirements of "more varieties, new color designs, small quantities, and prompt deliveries" in nearly 1,000 export contracts, the company gave maximum quarantee of planning, the supply of raw materials, and the availability of auxiliary facilities. It organized visits to the plants and discussions with production departments by staff personnel and made sure that every product and every piece of equipment was accounted for. The various silk enterprises also paid attention to the overall picture and actively coordinated with each other. More than 2,000 pieces of machinery were changed to take care of the export goods alone. Whatever was needed for the export trade was actively produced. The delivery cycle was clearly shortened. As a result, a normal export work procedure began to be established and an international reputation was gained. Customers and letters and telegrams ordering goods came in increasing numbers. At the beginning of the year, there were only 30 some export contracts. By the second half of the year, trading relationships had been established with 455 customers in 41 countries and regions on the five continents of the world. A total of 3,703 export contracts for silk and replicas were signed during the year. A marketing network, centered on the Hong Kong area, for the active development of the Western Europe, United States, Japan, Middle East, and Near East markets began to take shape. The export contract consummation rate reached 73.5 percent, meeting the requirement of 70 percent established by the Ministry of Foreign Trade.

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FOREIGN TRADE

CHONGMING TO BECOME PRODUCTION BASE FOR EXPORT GOODS

Shanghai JIEFANG RIBAO in Chinese 20 Feb 82 p 1

[Article: "Develop and Construct Our Country's Third Largest Island; Chongming Will Become Production Base Specializing in Export Production; Procurement of Goods for Export Placed First Among Suburbs"]

[Text] Correspondent Lin Zitong [2651 1311 6639] and reporter Gao Xiaoxiao [7559 5135 4562] have learned from the department concerned that Chongming County will become Shanghai's production base specializing in export production. Currently, over 270 production centers and a number of production projects for export goods have been developed in the county. The volume of procurement of export goods in 1981 jumped to the number one position among all suburban counties.

Chongming is a distant suburb of Shanghai and our country's third largest valuable island. In order to develop the island resources to serve export, Chongming was the first to establish a county and bureau-level foreign trade company under the guidance of leading departments in the municipality and the county, that is to provide liaison and contact with the municipal headquarters company for foreign trade and related import and export companies and to develop exports.

Based on the characteristics of an island (in the sea) and local resource advantages in Chongming County, over 200 production centers for farm and sideline products have already been developed. Among them are white goats, baby eel, mink, loofah, dehydrated vegetables, and long-haired rabbits, all of which have distinctive local features. The procurement of these special native farm and sideline export products in 1981 increased by nearly five times over 1977 when the centers were first established. The procurement of goat's hair from the white goat production center, which was the first center to be established, increased by over four times over that of 1977. The hair from the necks and backs of the male goats raised here has a high resilience. It is highly treasured in the world and can be used for making high grade writing brushes, oil painting brushes, and brushes for precision instruments. Baby eels are produced at the mouth of the Yangtze River. During flood season around the spring festival, the commune members braved the wind and snow to catch them, creating large amounts of foreign exchange for the state. The cotton produced here has long fibers and good quality and can be used for weaving high count cloth. Through arrangements made by export companies for textiles, garments, and crafts, such easily exportable pure cotton goods as superior quality white blank fabric, color fabrics, towels, bath towels, sheets, and handkerchiefs have already been produced.

A new industry--household electric appliances--has also been developed on this island by foreign trade departments. Under the support of the import and export company for light industries, the household electric appliances industry was developed rapidly with outstanding results. Currently 10 some products are produced, including electric blowers, electric fans, electric irons, refrigerators, electric stoves, flashlights, electric curlers, plastic covered electric wires, and sun lamp ballast and stands. Among these, the Wanli brand electric blower manufactured by the Chongming Electric Equipment Plant is among the best in the country and is widely sold in the international market.

Currently, the concerned department in Chongming County is developing ways to produce new export products and further planning the sources for export goods in the county so that the island will be established as a production base specializing in export production as rapidly as possible.

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GENERAL

REPORT ON 1981 FUJIAN ECONOMY

Fuzhou FUJIAN RIBAO in Chinese 14 Mar 82 p 2

[Article by Hu Ping [5170 1627]: "A Report on Conditions in Implementing the National Economic Plan in 1981"]

[Excerpts] In the one year since the Third Plenum of the Fifth Fujian Provincial Congress, we have thoroughly implemented the Party Central's suggestions for carrying out economic adjustments and in politics we have made progress in implementing the principle of stability and in carrying out the special policies and lively actions directed toward our province. Our economic situation is good. In 1981, the overall production value for industry and agriculture totaled 11.51 billion yuan, which was 4.5 percent over planned production and 7.4 percent higher than the previous year.

In agriculture, there were adjustments in rural production relationships and in the structure of agricultural interprises. There was overall implementation of various forms of production responsibility systems and there were improvements in the agricultural side-line products selling prices. This stimulated the peasants' enthusiasism for production and the agricultural economy is in fine shape. The total value of agricultural production for the whole province was 4.43 billion yuan, which was 5.5 percent over the plan and 7.2 percent greater than the previous year. Even though some prefectures encountered repeated disasters there still were good all-round harvests in agricultural production. Total grain production for the entire province reached 16.197 billion jin, which was 150 million jin more than the historical production record set in 1980. Such cash crops as peanuts, rapeseed, sugarcane, tobacco, tea and fruit also attained seldom-seen large production increases. Forestry, animal husbandry, fishery, side-line enterprises and brigade enterprises all made new achievements. Income from brigade enterprises increased by 10 percent and commune members side-line household occupations developed even more rapidly.

During the adjustments industry continued to make increases and total industrial production value for the entire province reached 8.12 billion yuan, 4 percent over the plan and 7.6 percent higher than the previous year. Of the 56 various projects listed in the provincial plan, 42 of them either fulfilled or overfulfilled planned production, while only 36 accomplished this the previous year. Because of the principle and concrete actions regarding greater emphasis on the production of consumer goods, there were relatively large increases in light industry production, especially the textile industry. Production value was 11.5 percent higher than the previous year while the ratio of light industry increased from 61.6 percent the previous year to 63.8 percent. In heavy industry the adjustment tended toward service and the production structure was improved with an overall increase in production value of 1.2 percent. There was an improvement in the economic efficiency throughout the industrial enterprises, with an improvement in the quality of some products and a decrease in the consumption of raw materials, power and energy. There was a 5.9 percent decrease in the amount of energy for each 10,000 yuan of industrial products produced. State operated industrial enterprises had profits 3.9 percent higher than the previous year and achieved increases in both production and income.

The Department of Transportation fulfilled its responsibility in the transportation of all major goods. Both steamship transportation and railway transportation exceeded their planned cargo capacity by 5.2 percent and 2 percent, respectively. Truck transportation completed 92.2 percent of its planned capacity. Harbor construction has accelerated and the cargo handling capacity exceeded the plan by 6.2 percent.

There was a reduction in the scope of basic construction. At the beginning of the year the Provincial People's Congress set the scope of capitalization at 5.6 hundred million yuan, including items for various affiliated organizations it then came to 6.3 hundred million yuan, and of this 243.08 million yuan was planned in the budget. During the process of implementation certain adjustments were made. The year's bduget was handed down at 8.5 hundred million yuan and investment was completed at 8.7 hundred million yuan, which was 15.8 percent less than last year. Of this, the budget included investment of 3.87 hundred million yuan (including a local budget of 2.05 hundred million yuan) which was 28.3 percent less than the previous year. The direction investments took was toward making adjustments and raising the ratio of investment in the textile industry, in culture, education and health, in urban construction and in staff and worker housing. The investments showed improved results, the province-wide rate of return on capital construction fixed assets rose by 19.5 percent, reaching 81 percent. Ten large or middle scale construction projects went into full or partial production. There are four newly added sugar plants capable of pressing 500 dun of cane per day, 30,000 new weaving spindles, 60,000 square meters of additional lumber transport capacity, 21 more kilometers of railway and 2 new electric transformer substations. Three projects to expand integrated amonia and urea systems into 110,000 dun urea plants have already been completed. The Xiamen port of Dongdu completed ahead of schedule a plan handed down by the transportation department and the No 1 and No 2 deepwater berths (10,000 and 50,000 dun) are already operational. Construction at the Fuzhou airport is proceeding rapidly and it is estimated that it will resume operations this March.

Certain results were obtained on the financial battlefront in making structural adjustments, galvanizing the economy, supporting production and laying out the city marketplaces. Last year, after the province over-fulfilled its duties in subscribing to national treasury bonds andin reducing expenditures, there were financial revenues of 1.449 billion yuan and expenses of 1.425 billion yuan, which reflects the balance of financial revenues and expenses. There were relatively large increases in the spread of urban markets and in the sale of commodities. The province-wide net sale of commodities by the department of commerce increased by 7.1 percent over last year. Of this, agricultural side-line products increased by 6.1 percent, net food grain sales (including negotiated purchases) increased by 7.9 percent and industrial products sales increased by 7.7 percent. Because of increased in commodity supplies the retail sale of social commodities reached 5.683 billion yuan, a 9.8 percent rise over the previous year.

There were developments in international economic activities. The year's total of commodities exported reached 1 billion yuan, an increase of 27.5 percent. Even though restrictions were in effect, the export of such major commodities as rice, granulated sugar and tungsten ore which have a relatively high rate of exchange, the level nonetheless reached 3.8 hundred million US dollars, an increase of 5.2 percent. There were gradual increases in joint capital operations, compensatory trade and processing of imported raw materials. The Xiamen special economic zone is rapidly being built and the Huli processing zone has already begun land-leveling operations.

Wise development and scientific and technological work have begun to improve our major projects. Science and technology play an increasingly positive role in giving impetus to national economic development. Culture, education and health continuedto advance during the process of carrying out the adjustments. Throughout the province, over 35,000 college, middle school and vocational school graduates are taking up their sentry posts, the highest number ever. The reform of the structure of middle school education was an important step. New accomplishments were obtained in culture, physical education, journalism and broadcasting. However, the birth rate and the population have began to rise again. The rate of natural population increase is 12.4 per thousand, a net increase of 316,000 people, so at year-end the population reached 25,569,000 people.

With the foundation of production developments, there were continued improvements in people's lives. Developments in agricultural production mean that the projected average income of commune menbers might reach 194 yuan, 12.7 percent higher than the previous year. Their share of the collective income was 84 yuan, an increase of 16.8 percent. During the year, employment was found for over 168,300 of the people awaiting assignment. There were wage increases for middle and elementary school teachers, some medical personnel and physical education workers. Staff and worker housing had investments totaling 304 million yuan, an increase of 16.7 percent over the previous year, resulting in completed floor space totaling 1,780,000 square meters. This, together with the completed housing and the construction funded by the inhabitants over the last two years, resulted in improved staff and worker housing conditions.

During this past year, there have been new devlopments in the state economy in our province. Nonetheless, many problems and difficulties yet remain, some of them rather conspicuous. The hidden dangers existing in economic construction have not yet been eliminated. The balance of income expenditures was obtained under conditions of reduced expenditures. The economic structure, especially the structure of production under the adjustments, has not produced ideal results and it will take prodigious efforts to improve the efficiency of the economy. There are shortcomings in our planned work. We lack adequate understanding of principles of a primary planned economy and supplementary market adjustments. We lack the strength to carry it out and we do not have a firm grasp on overall balance in the economy. Although we have taken some steps to stabilize commodity prices, there has been an increased gap between the ability of the province to provide commodities and the buying power of the people because of increased bonuses, barganing and price hikes for agricultural side-line products. Additionally, because of our inadequate supervision and study of the plan, some places and units have relaxed their implementation of the plan, the planned purchase of some agricultural side-line products was not properly carried out and there were relatively serious instances of drains on goods not covered by the plan, so that there were sharp contradictions in market supply and demand. The resulted in price inflation, especially in inflated prices for goods which are so important to the people, such as fresh vegetables and non-staple foods traded in the marketplaces. The prices in our province rose at faster rate than the the average national price rises. All this awaits advances in our overall experience in order to carry out genuine progress.

11582
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TITLE: "Practice and Knowledge of Vortex Spinning"

SOURCE: Shanghai FANGZHI XUEBAO [JOURNAL OF CHINA TEXTILE ENGINEERING ASSOCIATION] in Chinese Vol 3 No 2, Feb 82 pp 67-72

TEXT OF ENGLISH ABSTRACT: The main points of this paper are outlined as follows:
1. A reasonable structure of the vortex tube is presented. The vortex formation in the tube and the distribution of air speed and pressure are analyzed. An equation is derived to express the fact that the difference between the pressure at the center of the tube cross section and the atmospheric pressure is equal to the product of air density and the square of the outmost layer surface velocity of the vortex in the tube. Therefore, a vacuum-producing unit can be selected properly. A discussion is made of such problems as the fiber arrangement and yarn irregularity in vortex spinning by analyzing the fiber motion during their condensing process.
2. The effect of the friction between the yarn and the tube wall and also the head top, as well as of the axial air flow stability on twisting efficiency, is analyzed. Methods for improving twisting efficiency is also offered.
3. The relations among yarn count, tube vacuum, yarn twist and yarn strength are investigated.

[Continuation of FANGZHI XUEBAO Vol 3 No 2, Feb 82 pp 67-72

4. Discussions are made on the strength and constructional feature of the yarn for vortex spinning, the irregularity of the yarn and its influence on cloth appearance, and the yarn count and fiber types suitable for vortex spinning.

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TITLE: "An Approach to the Designing of the Blowing Bag Filter System"

SOURCE: Shanghai FANGZHI XUEBAO [JOURNAL OF CHINA TEXTILE ENGINEERING ASSOCIATION] in Chinese Vol 3 No 2, Feb 82 pp 73-77

TEXT OF ENGLISH ABSTRACT: Through testing and analysis the following conclusions have been arrived at:
(1) For one set of scutching machines, using only one dust extraction system is of great benefit to energy saving and quality control.
(2) The proper air current speed in the duct is recommended within the range of 8~10 m/sec, the higher being undesirable.
(3) The larger the dust chamber, the less the static pressure and the lower the resistance, the smaller is the power consumption. A corresponding method for calculating simply the length of the top dust chamber has been suggested.

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TITLE: "Testing of the Roving Tension and Some Discussions"

SOURCE: Shanghai FANGZHI XUEBAO [JOURNAL OF CHINA TEXTILE ENGINEERING ASSOCIATION] in Chinese Vol 3 No 2, Feb 82 pp 79-85

TEXT OF ENGLISH ABSTRACT: The roving tension is measured by means of a strain gauge type Y6D-3A and an oscillograph model SC-16. On different type speed frames, various rovings are experimentally spun in large packages with or without false twister at high speed.

The following results have been obtained:
1. The fluctuation of the roving tension:
i. The pulsating frequency of the spinning tension equals the cycle frequency of the spindle; ii. The spinning tension of the front row is always greater than that of the back row; iii. The fluctuation of the tension is closely related to the cone pulley profile; iv. The spinning tension of man-made fiber roving is greater than that of the pure cotton roving; v. The spinning tension in a large package is greater at high speed; vi. The spinning tension is greater when the false twister is used; vii. The tension is greater when the bobbin rail is at the mid position of its lift than at the top and bottom positions.

[Continuation of FANGZHI XUEBAO Vol 3 No 2, Feb 82 pp 79-85]

2. The relationship between the semifinished product quality and the spinning tension.

The roving and yarn quality will be spoiled when the false twister works unsatisfactorily and if the tension difference between the front and the back rows for pure cotton rovings is large.

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TITLE: "Kinematic Analysis and Synthesis of Rapier Driving Mechanism of the Conjugate Cam Type"

SOURCE: Shanghai FANGZHI XUEBAO [JOURNAL OF CHINA TEXTILE ENGINEERING ASSOCIATION] in Chinese Vol 3 No 2, Feb 82 pp 87-94

TEXT OF ENGLISH ABSTRACT: This paper mainly deals with:
1. Kinematic analysis of a special mechanism with an analytical method has been presented so that the motion of the oscillating follower in the conjugate cam mechanism can be determined.
2. The appropriate sizes of the base circles for the conjugate cam driving the rapier and of its oscillating follower have been specified according to the allowable pressure angle.
3. The equations for such conjugate cam profiles are derived by means of coordinate transformations.

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TITLE: "A Digital Electronically Controlled System in Cotton Jacquard Loom"

SOURCE: Shanghai FANGZHI XUEBAO [JOURNAL OF CHINA TEXTILE ENGINEERING ASSOCIATION] in Chinese Vol 3 No 2, Feb 82 pp 95-100

TEXT OF ENGLISH ABSTRACT: This paper introduces an electronic digital control system in the cotton jacquard loom. This system does not need any complicated techniques for preparing the classic point design draft and jacquard card. However, the cotton jacquard looms can weave directly after the artistic design draft. Thus, a lot of tedious work in the information processing can be saved, and the time required for changing patterns can be shortened greatly. The system acquires the information of the pattern by a scanning device which discriminates and separates colors by photoelectric transducing and the processes the signal by a digital circuit. Finally, the patterning information is supplied to the jacquard loom by the electromagnetic actuator.

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TITLE: "Electron Microscopy for Studying Wool Keratin"

SOURCE: Shanghai FANGZHI XUEBAO [JOURNAL OF CHINA TEXTILE ENGINEERING ASSOCIATION] in Chinese Vol 3 No 3, Mar 82 pp 131-135

TEXT OF ENGLISH ABSTRACT: The fine structure of Chinese wool has been studied through the observation of transmission electron images and secondary electron images. The transmission electron images were obtained from the ultra-thin sections of wool in TEM, and the secondary electron images from the wool fracture in SEM. The double embedding techniques of preparing samples were used for the experiment.

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TITLE: "An Automatic Twist Tester for Self-twist Yarn"

SOURCE: Shanghai FANGZHI XUEBAO [JOURNAL OF CHINA TEXTILE ENGINEERING ASSOCIATION] in Chinese Vol 3 No 3, Mar 82 pp 137-140

TEXT OF ENGLISH ABSTRACT: The automatic twist tester is designed for the rapid measurement of the twists per half cycle along the sell-twist yarn. The yarn is passed continuously through a mechanical transducer consisting of two measuring plates, one stationary and the other movable. The movable plate can vibrate up and down. A semiconductor strain gauge is utilized to convert the projected diameter approximately into an electric signal for each half twist of the yarn. The twist number can be obtained by totaling the twists for each half-cycle of the yarn through the computing circuit.

The half-cycle twists of self-twist yarn can be measured continuously for different cycle lengths. The tester is eight times faster than the manual method. A set of

[Continuation of FANGZHI XUEBAO Vol 3 No 3, Mar 82 pp 137-140]

experiments has been carried out to assess the measurement accuracy and stability of the tester and it has been proved to work well. The testing results of the tester deviate from those of the manual method by about -1 ~ +3 percent.

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TITLE: "The Impact Action between Non-linear Cam and Knitting Needles"

SOURCE: Shanghai FANGZHI XUEBAO [JOURNAL OF CHINA TEXTILE ENGINEERING ASSOCIATION] in Chinese Vol 3 No 3, Mar 82 pp 141-146

TEXT OF ENGLISH ABSTRACT: This paper describes investigations and discussions on the impact action between non-linear cam and knitting needles. It also gives a typical mode of the oscillogram of acting force between the practical non-linear cam and some useful conclusions of the acting force.

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